

REMARKS

Claims 1-19 were pending in this application before this Response. Applicant has cancelled claims 1-4, which were withdrawn from consideration, without prejudice. Applicant has amended claim 13 to provide more consistent language between "internal wall" and "interior wall". Applicant has added new claims 20-23 to more fully protect the invention. In view of the cancellation of claims 1-4, applicant believes that no additional fee is required for this addition. If this is not correct, the Commissioner is requested to charge any additional fees to Deposit Account No. 08-0750.

Applicant respectfully requests reconsideration of the rejection of claims 5-19 under 35 U.S.C. §103(a) as being unpatentable over Knoll, U.S. Patent No. 3,742,620, in view of Kofman et al., U.S. Patent No. 6,542,249.

Claim 5 (and claims 6 - 8 which depend therefrom) requires "a reflector on at least a portion of the side wall" and "at least one laser source for projecting a fan-shaped beam across the horizontal work surface to the reflector" which are not shown in, or obvious from the references. The Office Action concedes that these elements are lacking in Knoll. However, while Kofman does show a laser, it does not show "a reflector on at least a portion of the sidewall" surrounding the modeling area, nor does it show a laser source for projecting a fan shaped beam across a horizontal work surface to this reflector. While the Office Action points out that in Kofman, col. 7, lines 1-5, reference is made to beam splitters, prisms or rotating mirrors, this is to create a fan-shaped beam. There is no disclosure or teaching that these are located on a sidewall that at least partially surrounds the work surface. Applicant's claimed apparatus, applies contours lines around an object, not just along one side for detection by a camera as in the Kofman scanning device. Applicant's claimed apparatus applies contour lines not just on the surfaces directly facing the laser source, but also on at least some surfaces that do not directly face the laser source, due to the reflection from the reflectors on the sidewall at least partially surrounding the work surface. This is not shown or suggested in Kofman. Indeed there would be no need in Kofman to project contour lines on other surfaces, because the contour lines in Kofman need only be on the surfaces exposed to the camera adjacent the laser source.

With respect to claim 9 (and claims 10-12 depending therefrom) these claims require “means for generating a plurality of planes of laser light across the generally horizontal work surface which illuminate contour lines on a model on the work surface”. As explained above with respect to claims 5-8, the references do not disclose no means for generating a planes of laser light “which illuminate contour lines on a model on the work surface”. Knoll does not disclose the laser illumination of contour lines, and Kofman only discloses means for generating a *partial* contour line on the surface facing the laser source and the camera.

With respect to claim 13 (and claim 14 depending therefrom), this claim requires “at least one interior wall inside the sidewalls defining a modeling area and a non-modeling area” and “at least one window in the interior wall” and “at least one laser source in the non-modeling area of the apparatus adapted to project a generally fan-shaped laser beam through the at least one window in the interior wall and across the modeling area.” This construction is not shown or suggested in Knoll, which doesn’t even have lasers, let alone modeling and non-modeling areas, with a window there between. Kofman also lacks the required structures, and it would not be obvious to provide them, because the point of Kofman appears to be the ability to scan an object, without restraint, with a movable laser-camera scanner.

With respect to claim 15 (and claims 16-18 which depend therefrom), claim 15 requires “projecting a plurality of planes of light in spaced relation over the surface of a support to illuminate contour lines on objects on the surface that break the planes of light”. This is not shown in Knoll which has no lasers. In Kaufman, fan-shaped beams are projected, but planes of light, capable of providing an entire contour line (rather than just a partial contour line on the part of the surface facing the laser) are not disclosed or suggested in Kofman. There would be no reason to provide a complete, visible contour line in Kofman on a portion of the object that is not visible to the camera, and it would be contrary to the teaching of providing scanning without constraint.

Similarly, claim 19 requires “projecting a plurality of planes of laser light horizontally across the work surface, and different levels to illuminate contour lines on the model where the planes impinge the model.” As discussed above with respect to

claim 15, this is not shown or suggested in Knoll or Kofman, or any obvious combination thereof.

For at least these reasons, applicant respectfully submits that the invention set forth in claims 5-19 would not have been obvious, and that the rejection of these claims should be withdrawn.

Applicant has added new claims 20-23 to more fully protect applicant's invention. These claims are allowable for at least the same reasons discussed above with respect to claims 5-14.

DRAWINGS

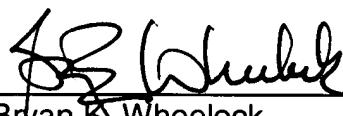
Applicant respectfully requests reconsideration of the objection to the drawings. Applicant respectfully points out that a modeling area, an non-modeling area, and window are illustrated in the Figures, including for example Fig. 4.

CONCLUSION

Applicant respectfully submits that upon entry of the above amendments, and consideration of the above remarks that claims 5-23, being all of the claims pending in the application, will be found to be in condition for allowance. If it would advance the prosecution of this application, the Examiner is invited to telephone the undersigned.

Respectfully submitted,

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By: 
Bryan K. Wheelock
Reg. No. 31,441

HARNESS, DICKEY & PIERCE, P.L.C.
7700 Bonhomme, Suit 3 400
St. Louis, Missouri 63105
(314) 726-7500